

CLAIMS

sub a' 1. A method for measuring the noise in a picture that includes a plurality of lines, comprising:
2 receiving a digital picture signal that includes a plurality of pixels indicative of the picture;
3 subdividing a line of said digital picture signal into several blocks (BL), each with several
4 horizontally adjoining pixels, wherein a picture region (BR) includes a plurality of said blocks
5 (BL) and the number of said blocks contained within said picture region (BR) corresponds to the
6 number of pixels contained in each block (BL);
7 determining a luminance DC component value for each of picture blocks;
8 processing for said picture region, said luminance DC component values associated with
9 each of a plurality of blocks within said picture region, by comparing each of said luminance DC
10 components to a minimum threshold value and a maximum threshold value, to detect at least one
11 homogeneous picture region (BR) within the picture;
12 determining a high frequency component (HP) within said at least one detected
13 homogeneous picture region (BR);
14 processing said high-frequency signal component (HP) to determine the noise contained in
15 the picture and providing a noise signal indicative thereof; wherein
16 said luminance DC component of each block (BL) is determined by the following relation

$$LP(x', y) = \sum_{i=0}^n lum(i + nx', y),$$

18 where LP designates the luminance DC component of the corresponding block (BL), (x',y)
 19 designates the position of the corresponding block (BL) in the picture, lum designates the
 20 luminance value or the difference luminance value of the corresponding pixel, and n designates the
 21 number of horizontally adjoining pixels contained in the corresponding block (BL);

22 wherein each block (BL) contains five horizontally adjoining pixels, and for each block
 23 (BL) of the picture region (BR) which is recognized as homogeneous, a high frequency signal
 24 component (HP) is determined by the following relation

$$HP(x', y) = lum(5x', y) - 2lum(1 + 5x', y) + 2lum(2 + 5x', y) - 2lum(3 + 5x', y) + lum(4 + 5x', y),$$

25 where HP designates the coefficient of the corresponding block (BL), (x',y) designates the position
 26 of the corresponding block (BL) in the picture, and lum designates the luminance value or the
 27 difference luminance value of the respective pixel.
 28